Plasma carotenoids as a useful indicator of vitamin A status

Dear Sir:

We do not agree with the view that "plasma carotenoids give no information about vitamin A status and that in healthy subjects plasma carotenoids and vitamin A values are not correlated" (1).

In black Africa and many developing countries, several food consumption surveys have shown that most of the vitamin A in the diet is of vegetable origin, that is, carotenoids.

Plasma carotenoids are a useful indicator of the recent intake of carotenoids and therefore of the vitamin A status.

To our knowledge vitamin A deficiency does not exist in forest areas where carotenoid intake and therefore plasma carotenoids are high. On the contrary, xerophthalmia is found in savanna regions where carotenoid intake and plasma carotenoids are low.

Plasma carotenoids and vitamin A determinations performed with a colorimetric method using trifluoroacetic acid in several populations have furthermore shown a good correlation between these two parameters (**Table 1**).

The higher correlation found in children may mean that their vitamin A status is more dependent on their carotenoid intakes and that their liver stores are lower than in the adults.

We recommend for the conservation of plasma samples *1*) an immediate storage of the plasma in polypropylene tubes in azote liquid containers and *2*) the samples are later transfered to a −70C deep freeze. In these conditions we have not noticed any degradation of plasma carotenoids and vitamin A for several months.

We are presently arranging our data for publication.

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TABLE 1
Correlation coefficients between plasma carotenoids and vitamin A in several populations

Country	No. cases	Correlation coefficients	Reference
11 countries	48 average values of 5520 individuals	0.755 ($p < 0.001$)	(2)
Cameroon (South, forest)	257 children 8–20 mo	0.526 ($p < 0.001$)	(3)
Upper Volta (savanna, dry season)	194 children 0–14 yrs	0.520 ($p < 0.001$)	(4)
	316 adults	0.251 ($p < 0.001$)	(4)
Mali (South, shrubby savanna, rainy season)	135 children 0–14 yrs	0.550 ($p < 0.001$)	(4)
	253 adults	0.219 ($p < 0.001$)	(4)

References

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